

PUBLIC HEALTH FACT SHEET

Anthrax

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What is anthrax?

Anthrax is a disease caused by the bacteria (germ) *Bacillus anthracis*. These bacteria are found naturally in the soil and infections can occur in cattle and other domestic animals (sheep, goats, etc.). The anthrax bacteria are very hardy and can live in the environment for a long time. They form a protective shell; this is called the spore form of the bacteria. Exposure to the bacteria in nature can infect humans, but there has not been a case of anthrax in Massachusetts in over 30 years.

How is anthrax spread?

Anthrax can infect a person in three ways: by anthrax spores entering through a break in the skin, or by breathing in the anthrax spores or by eating contaminated, undercooked meat. Anthrax is *not* spread from person to person by causal contact, sharing of office space or by coughing or sneezing.

Can anthrax be used for bioterrorism?

Yes, it is possible for anthrax to be used this way. Bioterrorism is the use of any biological organism to hurt people or create fear. In order to make anthrax into a bioterrorist agent that could harm someone, it would have to be processed in a very special way. Anthrax has been used to contaminate letters sent in the mail.

What are the symptoms of anthrax disease?

There are three main kinds of human anthrax, all are treatable with antibiotics:

- **Skin anthrax** is the least serious form of human anthrax. It is caused when the germ makes direct contact with a cut or a break in the skin. The first symptom is a small, painless sore that develops into a blister with swelling and redness of the surrounding skin. One or two days later, the blister breaks and develops a black scab in the center. A mild fever and swollen lymph nodes are also common. Without treatment, skin anthrax can kill about 10% of infected people; however, with treatment, death is rare.
- **Gastrointestinal (GI) anthrax** is the least common type of human anthrax. It is caused by eating undercooked contaminated meat. The initial symptoms are nausea, vomiting, loss of appetite and fever, followed by severe abdominal pain and bloody stools. While gastrointestinal anthrax is very rare, most people who develop GI anthrax die, even with treatment.
- **Inhalation anthrax** is the most serious form of human anthrax. Inhaling anthrax spores directly into the lungs causes it. The first symptoms are those that are usually fever, fatigue, cough, headaches, chills, weakness, difficulty breathing and chest discomfort. Nausea, vomiting and abdominal pain are also common. These are followed by worsening difficulty breathing, chest pain, chills and other serious symptoms. Without treatment, inhalation anthrax nearly always results in death. With current treatment, the death rate is 50% (5 deaths among 11 cases occurred in the 2001 anthrax bioterrorism events).

How is anthrax diagnosed and treated?

Anthrax is diagnosed when a laboratory can find the germ in blood samples, swabs from skin lesions (sores), or respiratory secretions (material from the lung). Anthrax can also be diagnosed by detecting specific antibodies (bacteria fighters) in the blood.

Should I take antibiotics just in case?

Unless a direct exposure to anthrax is known to have occurred, there is no reason to take antibiotics. Inappropriate use of antibiotics may cause antibiotic resistant (difficult to treat) strains of bacteria that cause common diseases. Antibiotics may also cause harmful or unpleasant side effects and, therefore, should only be taken with your doctor's supervision.

The United States government has a stockpile of antibiotics available for infectious disease emergencies. Therefore, it is not necessary for you to have your own stockpile of antibiotics.

Is there an anthrax vaccine?

There is an anthrax vaccine, but it is currently only available to certain individuals considered to be at risk for anthrax.

Should a person infected with anthrax be excluded from work or school?

No. Since direct person-to-person spread of anthrax does not occur, an infected person need not be excluded from work or school.

How can I protect myself from anthrax in the mail?

It is important to remain calm and cautious. Individuals should be more aware of suspicious packages and letters that arrive in the mail. Some typical characteristics that ought to trigger suspicion include letters or parcels that:

- Have any powdery substance on the outside.
- Are unexpected or from someone unfamiliar to you.
- Have excessive postage, a handwritten or poorly typed address, incorrect titles or titles with no name, or misspellings of common words.
- Are addressed to someone no longer with your organization or are otherwise outdated.
- Have no return address or have one that can't be verified as legitimate.
- Are of unusual weight, given their size, or are lopsided or oddly shaped.
- Have an unusual amount of tape.
- Are marked with restrictive words, such as "Personal" or "Confidential."
- Have strange odors or stains.

If you receive any mail that contains a threatening or unusual substance, wash your hands with soap and water and call your local police department for instructions on how to proceed.

Where can I get more information?

- Your doctor, nurse or clinic
- The Centers for Disease Control and Prevention (CDC) website at: <http://www.bt.cdc.gov/>
- Your local board of health (listed in the telephone directory under "government")
- The Massachusetts Department of Public Health (MDPH), Division of Epidemiology and Immunization at (617) 983-6800 or toll-free at (888) 658-2850, or on the MDPH website at <http://www.mass.gov/dph>
- The Massachusetts Department of Public Health Information Line at (866) 627-7968